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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/778,365	02/08/2001	George G. Barclay	50533	6843
21874	7590	04/21/2004	EXAMINER	
EDWARDS & ANGELL, LLP P.O. BOX 55874 BOSTON, MA 02205			HAMILTON, CYNTHIA	
			ART UNIT	PAPER NUMBER
			1752	

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/778,365	BARCLAY ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Cynthia Hamilton	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12, 15 and 25-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30-34 is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-11 and 26-29 is/are rejected.
- 7) ☒ Claim(s) 7, 12, 15, 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### DETAILED ACTION

1. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. (e) as follows:

Applicants failed to file no later than 12 months after the date of the provisional application (SN 60/180,905). Thus, **the effective filing date for this application is February 8, 2001.**

2. The indicated allowability of claim 29 is withdrawn in view of careful review of Takeda et al (2001/0036593 A1). New rejections based on Takeda et al follow. This action is not made final because of this reversal on the part of the Examiner of record.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-6, 8-9 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Takeda et al (US 2001/0036593 A1). The processes, photoresists and coated substrates of

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Takeda et al anticipate applicants invention with respect to instant claims 1-6, 8-9 and 29 and the use of alkane solvent as organic solvent for treating a prepared resin wherein the alkane species disclosed by Takeda et al are pentane and hexane. While specific ranges of molecular weight range components excluded by the extraction steps of Takeda et al are not disclosed the molecular weights obtained along with the molecular weight dispersity achieved is indicative such components are removed by the steps given in the Examples of Takeda et al. In Takeda et al, see particularly [0013, 0025, 0028, 0099, 0100], and claims 3-4 wherein a polymer comprising recurring units of formula (2) and recurring units of formula (1) and  $R_2=H$  are chosen. No working examples in Takeda et al have acrylates. They have methacrylates instead. Applicants do not define acrylate in their specification, so the term is taken to mean acrylates and acrylates alone. Thus, the instant claims do not read on their own example 4 wherein a methacrylate is used to form the resin for the photoresist. The choice of acrylate or methacrylate in claims 3 and 4 is seen as so small as to be immediately envisionable and therefore anticipatory of applicants' invention.

7. Claims 1-6, 8-11, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al (US 2001/0036593 A1). With respect to instant claims 1-6, 8-11, and 29, Takeda et al teach the instant processes with the exception of setting forth a working example wherein the chemical amplification type resist composition of their Abstract makes use of an acrylate instead of a methacrylate. However, acrylates as well as methacrylates are clearly disclosed in formula (2) as only two choices of  $R_2$ , i.e. hydrogen or methyl, are given in [0009]. The  $R_3$  is a tertiary hydrocarbon well known in the chemically amplified resist art to be acid cleavable. Thus, all

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choices of R3 in Takeda et al are acid cleavable. Takeda et al teach a method of treating a base resin for these types of resists wherein a narrow dispersity or polydispersity index is achieved.

8. With respect to the rejection in view of alkanes the examiner restates the following from the last office action because of her reversal with respect to the teachings of Takeda et al.

Applicant's arguments filed December 4, 2002 have been fully considered but they are not persuasive. Applicants argue that Takeda document does not have a sufficiently early date to be prior art with respect to the present application. Applicants allege the "document can be antedated as presently applied by correction of the priority date of the application or Rule 131 declaration. Applicants have not successfully "corrected" their priority date. The effective filing date in this application is February 8, 2001. Applicants have had four petitions dismissed with respect to this "correction". Applicants have presented no Rule 131 declarations in this application. Thus, Takeda having a 102(e) date of January 17, 2001 is still of sufficiently early date to be prior art in the present application.

9. Claims 35 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 35-36 limit the method of claim 30 (if renumbered properly within the claims) to the resin being treated with a solvent. There is no solvent treatment step in claim 30, so it is not clear from claims 35-36 when such treatment occurs. Is it at washing after washing or before washing? Step (b) refers to "the treated resin" so treatment must occur before step (b). Claims 42-43 have similar problems with "treated" steps to resins since the parent claim of 37 (applicant's 36) does not have a treatment step set forth.

10. The following rejections are based upon applicant's newly amended claims.

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## 11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 8-9 and 26-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants in claim 1 require that treating with "one or more organic solvent chosen from among a halogenated solvent and an alkane solvent" occur. Thus, "treating" must occur with at least an organic halogenated solvent or an alkane solvent present. Claims 8-9 and 26-28 reference beyond these the following solvents of a solvent having an ester, a lactate, a hydroxy-containing solvent, ethyl acetate, anisole, ethyl lactate, methyl lactate, a glycol and methanol. The species specific compounds of ethyl acetate, anisole, ethyl lactate, methyl lactate, a glycol and methanol are not halogenated or alkane organic solvents. While applicants disclose using mixtures of their solvents in general, the only actual species specific disclosure of such is found on page 6, last line, wherein "methanol/heptane" is disclosed. There is no species specific original disclosure to mixing the halogenated solvent with an unhalogenated ester, an unhalogenated lactate, an unhalogenated hydroxy-containing solvent, ethyl acetate, anisole, ethyl lactate, methyl lactate, a glycol or methanol. There is no disclosure to mixing other than heptane with methanol of an alkane with an ester, a lactate, a hydroxy-containing solvent, ethyl acetate, anisole, ethyl lactate, methyl lactate, a glycol and methanol. The introduction of claim

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changes which involve narrowing the claims by introducing elements or limitations which are not supported by the as-filed disclosure is a violation of the written description requirement of 35 U.S.C. 112, first paragraph. See, e.g., *Fujikawa v. Wattanasin*, 93 F.3d 1559, 1571, 39 USPQ2d 1895, 1905 (Fed. Cir. 1996) (a "laundry list" disclosure of every possible moiety does not constitute a written description of every species in a genus because it would not "reasonably lead" those skilled in the art to any particular species). Thus, the examiner is forced to conclude that applicant's original disclosure would not have "not "reasonably lead" those skilled in the art to" the subspecies set forth by applicants with respect to mixing the required halogenated solvent or alkane with those set forth in claims 8-9 and 26-28 which are not by considering the list of solvents given by applicants as examples in the paragraph bridging pages 6-7 of the original specification and those found in the original claims. Thus, applicants have failed to show support for claims 8-9 and 26-28 as now read in consideration of amended claim 1.

13. Claims 30-34 are allowed.

14. Claims 7, 12, 15 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

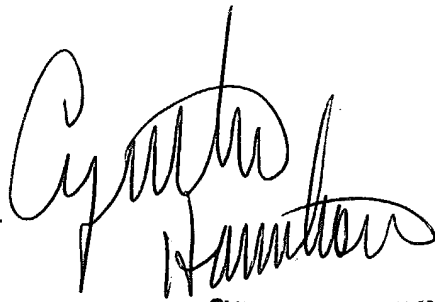
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Hamilton whose telephone number is 571-272-3331. The examiner can normally be reached on Monday-Friday, 9:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 19, 2004



**CYNTHIA HAMILTON  
PRIMARY EXAMINER**

Cynthia Hamilton  
Primary Examiner  
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